

Southeastern Utah's Amphibians



Southeastern Utah's Amphibians (Amphibian Species)

Thirteen amphibian species inhabit the ecosystems of southeastern Utah. Only the bullfrog (*Rana catesbeiana*) is exotic. All others are native and were likely present at the time of settlement (1847). The spotted frog (*Rana pretiosa*), which inhabits the west side of the Wasatch Plateau, has been included due to its high interest value as a Utah Division of Wildlife Resources listed threatened species. There is the potential for land use activities on the east side of the Wasatch Plateau to negatively impact the critical valued habitats of the spotted frog due to the westerly dip of groundwater flow.

To date no amphibian species in the region appear to be in jeopardy. Such is not the situation from a worldwide perspective. Caution and forethought relative to environmental protection should guide decisions regarding development and amphibians.

Amphibian dependence on water sources is evident in Table 2, where the wetland ecosystems contain the highest proportion of amphibians as compared with all other ecosystems. The agricultural ecosystem also supports a wide variety of species due primarily to the provision of water by irrigation practices. The majority of amphibian species in southeastern Utah inhabit the cold desert ecological association, followed by submontane, and montane zones. The tiger salamander (*Ambystoma tigrinum*) is the only species to inhabit the alpine, spruce/fir, aspen, and ponderosa ecosystems at montane elevations. It utilizes these ecosystems for foraging and burrowing, but maintains a close association with wetland areas (Table 2).

Moisture is the major limiting factor for the success of amphibian populations. Amphibians are dependent upon perennial, intermittent, or ephemeral water sources. Their scaleless skin, when exposed to air, will lose ambiotic fluid; particularly in dry environments with little humidity. They regain lost body fluid by absorbing it back through the skin from water sources or moist soil. Amphibians can be affected by changes to quantity of water and water quality parameters that include, but are not limited to, temperature, pH, dissolved oxygen concentrations, and turbidity. If such changes occur, amphibian species do not have the ability to move great distances to new localities.

Generally, pH 6.5 to 9.0 is considered suitable for maintaining healthy populations of aquatic life as long as rapid fluctuations within this range are avoided. Dissolved solid concentrations exceeding 15,000 ppm result in the disappearance of most aquatic life. Adult frogs can survive 10,000 ppm dissolved solids, whereas eggs suffer negative impacts at 5,000 ppm. Turbidity can also affect the survival and growth rate of aquatic organisms. Silt can adhere to eggs and kill them by preventing oxygen and carbon dioxide exchanges.

Life requisite information in this section has been focused towards the identification of preferred aquatic characteristics for amphibians. Breeding dates and optimum water temperatures have been specified. The length of time required for the metamorphosis of the larval form to adult is also indicated. Negative impacts could result to the reproductive behavior, egg development, metamorphosis, and survival of amphibian populations when life requisites and habitat requirements are not taken into account. If land use plans can be developed to avoid crucial biological periods, as well as impacts to critical valued habitats, amphibian species are likely to maintain healthy populations.

Table 2. Numbers (#) of amphibian species that now (1990) inhabit geographic areas and the proportion (%) of that total which each ecosystem by ecological association within southeastern Utah.

Geographic Areas (Elevation in feet)/#	WETLANDS												UPLANDS														
	WETLANDS						Mesic Meadow						Stream						UPLANDS								
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
Wasatch Plateau (5,500-10,741)/8	12	12	87				12	12	12	50	12	25				50	12	0	0	87	62				87	62	
Tavaputs Plateau (5,500-10,118)/8			87				12	12	12	50	12	37				62	12	0	0	87	50				87	50	
Cedar Mountain (5,500-7,664)/5										60	40	20				80	0		00	00	00			00	00	00	00
Henry Mountains (5,500-11,506)/9	100	12	12	12	12	12	50	12	37	25			37	62	12	0	0	00	37	00	37			00	37		
Abajo/Elk Ridge (5,500-11,362)/9	11	100	11	11	11	11	44	11	33	33			44	55	11	0	0	00	44	00	44			00	44		
LaSal Mountains (5,500-12,72)/9	11	100	11	11	11	11	44	11	33	33			44	50	11	0	0	00	44	00	44			00	44		
Dolores Triangle (3,937-7,428)/6	100	83					50	50	33	17	50	33	67	67	0	0	100	83	100	83	100	83					
San Rafael Desert (4,120-7,920)/7	14	4	86	100			57	57	43	29	57	43	71	71	0	0	86	100	86	100	86	100					
Burr Desert (4,500-6,522)/6	17	100					67	67	50	33	67	50	50	50	83	83	0	0	100	100	100	100		100			
Cisco Desert (3,937-5,300)/7	14	100					57						71	0	0	100	100	100	100	100	100			100			
Canyonlands (3,700-10,388)/10	17	0	90	90			10	10	10	40	40	30	30	50	40	40	60	60	20	0	0	90	90	40	90	90	

Amphibian Species	indigenous/exotic	Relative Biological value of Ecosystems: (C) critical; (H) high priority; (S) substantial; (L) limited															
		Urban	Agricultural	Alpine	Spruce/Fir	Ponderosa	Aspen	Sagebrush/grass	Mountain Brush	Blackbrush	Grassland	Bareen	Marsch	Riparian	Mesic Meadow	Stream	Lake
(*) high-interest because of economic, aesthetic, educational, scientific, or ecological value.	Distribution by Geographic Area																
Family: Ambystomatidae tiger salamander <i>Ambystoma tigrinum</i>	Indigenous	c	Wasatch Plateau														
		c	Tavaputs Plateau														
		k	Cedar Mountain														
		c	Henry Mountains														
		c	Abajo/Elk Ridge														
		c	LaSal Mountains														
		c	Dolores Triangle														
		k	San Rafael Desert														
		c	Burr Desert														
		c	Cisco Desert														
		c	Canyonlands														
Family: Pelobatidae western spadefoot <i>Scaphiopus hammondii</i>	Indigenous																
		k	Wasatch Plateau														
		k	Tavaputs Plateau														
		k	Cedar Mountain														
		k	Henry Mountains														
		k	Abajo/Elk Ridge														
		k	LaSal Mountains														
		k	Dolores Triangle														
		k	San Rafael Desert														
		k	Burr Desert														
		k	Cisco Desert														
		l	Canyonlands														

1. Relative Abundance: (c) common; (u) uncommon; (l) limited; (r) rare; (e) endangered; (t) threatened; (o) occasional; (a) accidental; (k) unknown to inhabit area

Amphibian Species	indigenous/exotic (*) high-interest because of economic, aesthetic, educational, scientific, or ecological value.	Relative Abundance ¹	Relative Biological value of Ecosystems: (C) critical; (H) high priority; (S) substantial; (L) limited												
			Urban	Agricultural	Alpine	Spruce/Fir	Ponderosa	Sagebrush/grass	Mountain Brush	Blackbrush	Grassland	Bareen	Mesic Meadow	Riparian	Stream
Great Basin spadefoot <i>Scaphiopus intermontanus</i>	c c c c c c c c c c c c c c c	Indigenous Wasatch Plateau Tavaputs Plateau Cedar Mountain Henry Mountains Abajo/Elk Ridge LaSal Mountains Dolores Triangle San Rafael Desert Burr Desert Cisco Desert Canyonlands													
Mexican spadefoot <i>Scaphiopus multiplicatus</i>	k k k k 1 1 k k k 1	Indigenous Wasatch Plateau Tavaputs Plateau Cedar Mountain Henry Mountains Abajo/Elk Ridge LaSal Mountains Dolores Triangle San Rafael Desert Burr Desert Cisco Desert Canyonlands	L						S	S		C	C	C	C

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			Urban	Agricultural	Alpine	Spruce/Fir	Aspen	Ponderosa	Sagebrush/grass	Mountain Brush	Pinyon/juniper	Salibrush/grass	Blackbrush	Grassland	Bareen	Marsch	Mesic Meadow	Riparian	Stream
Family: Bufonidae		Indigenous																	wetlands
western toad	u	Wasatch Plateau																	
<i>Bufo boreas</i>	u	Tavaputs Plateau																	
	k	Cedar Mountain																	
	k	Henry Mountains																	
	k	Abajo/Elk Ridge																	
	k	LaSal Mountains																	
	k	Dolores Triangle																	
	k	San Rafael Desert																	
	k	Burr Desert																	
	k	Cisco Desert																	
	k	Canyonlands																	
Great Plains toad		Indigenous							S	S	S	S	S	S	S	S	C	C	C
<i>Bufo cognatus</i>	c	Wasatch Plateau																	
	c	Tavaputs Plateau																	
	c	Cedar Mountain																	
	c	Henry Mountains																	
	c	Abajo/Elk Ridge																	
	c	LaSal Mountains																	
	c	Dolores Triangle																	
	c	San Rafael Desert																	
	c	Burr Desert																	
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Amphibian Species	indigenous/exotic	Relative Biological value of Ecosystems: (C) critical; (H) high priority; (S) substantial; (L) limited																wetlands															
		Distribution by Geographic Area		Urban		Agricultural		Spruce/Fir		Aspen		Ponderosa		Sagebrush/grass		Mountain Brush		Saltbrush/grass		Blackbrush		Grassland		Marsh		Bareen		Mesic Meadow		Riparian		Stream	
red-spotted toad <i>Bufo punctatus</i>	Indigenous	k Wasatch Plateau Tavaputs Plateau Cedar Mountain Henry Mountains Abajo/Elk Ridge LaSal Mountains Dolores Triangle San Rafael Desert Burr Desert Cisco Desert Canyonlands	c c c c c c c c c c	L									L		L		C		C		C		C		C		C		C		C		C
Woodhouse's toad <i>Bufo woodhousii</i>	Indigenous	Wasatch Plateau Tavaputs Plateau Cedar Mountain Henry Mountains Abajo/Elk Ridge LaSal Mountains Dolores Triangle San Rafael Desert Burr Desert Cisco Desert Canyonlands	c c c c c c c c c c	S				S			S			S		S		C		C		C		C		C		C		C		C	

1. Relative Abundance: (c) common; (u) uncommon; (l) limited; (r) rare; (e) rare; (o) occasional; (a) accidental; (t) threatened; (i) threatened; (n) endangered; (k) unknown to inhabit area

Amphibian Species	indigenous/exotic (*) high-interest because of economic, aesthetic, educational, scientific, or ecological value.	Relative Abundance ¹	Relative Biological value of Ecosystems: (C) critical; (H) high priority; (S) substantial; (L) limited															
			Urban	Agricultural	Alpine	Spruce/Fir	Aspen	Ponderosa	Sagebrush/grass	Mountain Brush	Blackbrush	Saltbrush/grass	Pinyon/juniper	Mesic Meadow	Riparian	Stream	Lake	wetlands
Family: Hylidae canyon treefrog <i>Hyla arenicolor</i>	Indigenous	k k k c c c k k c c	Wasatch Plateau Tavaputs Plateau Cedar Mountain Henry Mountains Abajo/Elk Ridge LaSal Mountains Dolores Triangle San Rafael Desert Burr Desert Cisco Desert Canyonlands												C	C	C	C
striped chorus frog <i>Pseudacris triseriata</i>	Indigenous	c c k c c c k k k	Wasatch Plateau Tavaputs Plateau Cedar Mountain Henry Mountains Abajo/Elk Ridge LaSal Mountains Dolores Triangle San Rafael Desert Burr Desert Cisco Desert Canyonlands		L										C	C	C	C

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			Urban	Agricultural	Alpine	Spruce/Fir	Aspen	Ponderosa	Sagebrush/grass	Mountain Brush	Blackbrush	Saltbrush/grass	Pinyon/juniper	Mesic Meadow	Riparian	Stream	Lake
Family: Ranidae		Indigenous	k	Wasatch Plateau													
*Bullfrog	<i>Rana catesbeiana</i>		k	Tavaputs Plateau													
			k	Cedar Mountain													
			k	Henry Mountains													
			k	Abajo/Elk Ridge													
			k	LaSal Mountains													
			k	Dolores Triangle													
			k	San Rafael Desert													
			k	Burr Desert													
			k	Cisco Desert													
			1	Canyonlands													
northern leopard frog	<i>Rana pipiens</i>	Indigenous	c	Wasatch Plateau													
			c	Tavaputs Plateau													
			c	Cedar Mountain													
			c	Henry Mountains													
			c	Abajo/Elk Ridge													
			c	LaSal Mountains													
			c	Dolores Triangle													
			c	San Rafael Desert													
			c	Burr Desert													
			c	Cisco Desert													
			c	Canyonlands													

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		Urban	Agricultural	Alpine	Spruce/Fir	Aspen	Ponderosa	Sagebrush/grass	Mountain Brush	Pinyon/juniper	Saltbrush/grass	Blackbrush	Grassland	Riparian	Stream	Lake
*spotted frog <i>Rana pretiosa</i>														C	C	C

These nongame frogs inhabit submontane and montane zones. They are insectivorous and diurnal. Breeding occurs from mid-February through August in permanent cold water pools which lack emergent vegetation. Males reach sexual maturity after 1-2 years and females after 2-3 years. They are considered to be state listed, threatened animals. Without proper management, they may soon become federally listed as threatened. Most likely, no populations persist on the east side of the Wasatch Plateau. However, they are present on the west side.

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